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6 August 1957

To: WRSP(1)
WRSP(2)
WRSP(3)

From: R-W

Info: Headquarters ✓

A field report from Detachment C, dated 17 June 1957, states that the System 1 test set is being worked over to determine the cause of intermittent loss of the lower pulse modulating frequencies and the inversion and drop in amplitude of the output pulse when switched from CW to pulse modulation.

Intermittent Loss of Low Repetition Rate Modulation

The trigger for the pulse modulator is derived from a sinewave that is distorted in an overdriven amplifier and then differentiated. The differentiated wave form is converted to a sharp trigger pulse in a thyratron circuit. As the sinewave frequency decreases, the differentiated output decreases. When the tubes age and circuit components change in value, the result may be intermittent loss of the lower pulse-modulating frequencies. If the problem becomes serious, please let the factory know. In the meantime, the following suggestion may be helpful during your experiments.

Suggestion: The overdriven amplifier is a 7-pin miniature pentode. Replace this with a 6J6 twin triode and rewire as a Schmitt trigger circuit.

Klystron Pulse Modulation Characteristics

I recently sent a suggestion to all detachments that the test set be rewired to include a control grid voltage adjustment in the event the pulse modulation characteristics were not normal when changing klystrons. I am enclosing a schematic showing this change. Limiting resistors are included to prevent the control grid voltage from exceeding maximum limits. Parts will be sent air mail. You will find a hole in the chassis next to the klystron. The potentiometer may be mounted through this hole. A previous memo describes the methods of adjusting this voltage.

[redacted]

PWA:hcp

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